

## BIOGRAPHICAL SKETCH

### Dr. Matthew Pruis

NorthWest Research Associates

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U.S. citizen

### PROFESSIONAL PREPARATION:

B.S. Applied Geophysics (summa cum laude), Michigan Technological University, 1995.

M.S. Oceanography (Marine Geology and Geophysics), University of Washington, 1998.

Ph.D. Oceanography, University of Washington, 2004.

### APPOINTMENTS:

Research Scientist, NorthWest Research Associates, Bellevue, WA, 2004-Present.

Visiting Scientist, Technical University of Denmark, Lyngby, Denmark, 2004.

Support Scientist, NorthWest Research Associates, Bellevue, WA, 1997-2004.

Research/Teaching Assistant, Univ. of Washington, Seattle, WA, 1995-1998, 2000-2004.

Teaching Assistant, Michigan Technological University, Houghton, MI, 1994.

NASA (Undergraduate) Fellow, United States Geological Survey, Flagstaff, AZ, 1994.

### RESEARCH INTERESTS:

Arctic Ocean and sea ice modeling.

Boundary layer theory, flow, interactions and fluxes in the oceanic environment.

Geophysical forward and inverse modeling techniques and time-series analysis.

### FIELD EXPERIENCE:

Participant in 7 land / near-shore research programs, 6 deep-water research cruises; including 2 research cruises using the ALVIN deep-diving submersible, 4 research cruises using the ROV Jason and 2 research cruises using the AUV ABE, 2 coring cruises; observer on 3 submersible dives, assisted in organizing and leading field excursions for a workshop in Barrow, AK to examine sea ice features.

### 5 MOST RECENT PUBLICATIONS:

Pruis, M. J., M. Coon and L. Toudal, Decoupling of ice production and ice extent in seasonally ice covered marginal seas, Fall AGU, San Francisco, CA, 2004.

Coon, M. D., M. J. Pruis and L. Toudal, Interannual variability of ice production in the Bering Sea, IGARRS, Anchorage, AK, 2004.

Pruis, M. J., S. Hautala, H. P. Johnson, I. Garcia Berdeal and T. Bjorklund, Turbulent heat flux in the deep ocean above diffuse hydrothermal vents, to be submitted to *Deep-Sea Res.* copy of paper available at [http://www.nwra.com/resumes/pruis/pruis\\_deepsea\\_2004.pdf](http://www.nwra.com/resumes/pruis/pruis_deepsea_2004.pdf)

Pruis, M. J., Energy and volume flux into the deep ocean: examining diffuse hydrothermal systems, PhD thesis, University of Washington, 128 pp, 2004.

Pruis, M. J. and H. P. Johnson, Tapping into the sub-seafloor: Diffuse hydrothermal flux from an active seamount on the Juan de Fuca Ridge, *Earth Planet. Sci. Lett.*, 217, 379-388, 2004.

#### **5 OTHER RELEVANT PUBLICATIONS:**

Pruis, M.J., M. Coon, L. Toudal, T. Maksym and G. Levy. A new sea ice model for the marginal ice zone, *SEARCH Open Science Meeting*, Seattle, WA, 27-30 October, 2003.

Johnson, H. P. and M. J. Pruis, Fluxes of fluid and heat from the oceanic crustal reservoir, *Earth Planet. Sci. Lett.*, 216, 565-574, 2003.

Johnson, H. P., J. Baross, T. Bjorklund, W. Brazelton, J. Huber, M. Johnson, M. Pruis, S. Lang, E. McCroskey, M. Mehta, A. Bowen, J. Howland, D. Butterfield, W. Martin, K. Roe, C. Channing, C. Kammerer, R. Light, V. Miller, M. McCarthy, W. Moore, M. Sharma and J. Voight, Probing for life in the ocean crust, *EOS*, Trans. AGU, 84(12), 109-116, 2003.

Pruis, M. J. and H. P. Johnson, Age dependent porosity of young upper oceanic crust: Insights from seafloor gravity studies of recent volcanic eruptions, *Geophys. Res. Lett.*, 29 (5), 10.1029/2001GL013977, 2002.

Pruis, M. J. and H. P. Johnson, Porosity of very young oceanic crust from seafloor gravity measurements, *Geophys. Res. Lett.*, 25 (11), 1959-1962, 1998.

#### **SYNERGISTIC ACTIVITIES:**

- Visiting scientist at Technical University of Denmark for 6 months in 2004.
- Assisted in organizing and leading field excursion for the Europa Focus Group Arctic Ice Field Conference, Barrow, Alaska, April 24-26, 2003.
- Authored online science journal published as four separate lead articles by the Astrobiology Magazine in May/June 2003 ([www.astrobio.net](http://www.astrobio.net)), excerpts of the journal were also published on Space.com and the NASA Ames Astrobiology web
- Developed an online magnetism tutorial; which was used by the Discovery Channel School's 'Understanding: Physics in Motion' program.
- Member of the Society of Exploration Geophysicists (since 1994) and the American Geophysical Union (since 1995).

#### **OTHER COLLABORATORS IN PAST 48 MONTHS (NOT IN PUBLICATION LIST):**

R. Kwok, Jet Propulsion Laboratory, California Institute of Technology; M. McPhee, McPhee Research Co.; H. L. Schreyer, University of New Mexico; D. Sulsky, University of New Mexico.

#### **GRADUATE ADVISOR:**

H. Paul Johnson